# WATER QUALITY MONITORING

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The Maine DEP BLWQ has a broad sampling program to assess water quality conditions. Water sampling programs are conducted to carry out two sections of environmental law: the Water Classification Program (38 MRSA, Article 4-A) described earlier, and Protection and Improvement of Waters (38 MRSA, Chapter 3). The DEP's sampling program is made up of four components shown below. In addition to these programs, data is provided by the Penobscot Indian Nation (PIN), the United States Geological Survey (USGS), United States Environmental Protection Agency (EPA), Department of Marine Resources (DMR), and many volunteer monitoring groups.

# A. Ambient Water Quality Monitoring

- determines attainment based on standards such as dissolved oxygen, bacteria, or trophic state (absence or presence of algae blooms)
- assesses whether discharges violate certain standards
- is required as a condition for hydropower licensing
- assesses contamination levels of metals and organics in fish and shellfish tissues and sediments
- assesses the condition of aquatic communities
- assesses lake problems through sampling efforts of both staff and volunteers
- used to assess trends in water quality

### **B.** Treatment Plant Compliance Monitoring

- assesses compliance with wastewater discharge licenses
- determines water quality effects of combined sewer outflows

## C. Investigations

 respond to complaints of unlicensed discharges and other environmental concerns

### D. Modeling

• used to predict the effects of present and proposed discharges using water quality data and computer modeling





For specifics regarding our water quality monitoring programs, see Part III of the complete 305(b), or contact the DEP BLWQ.

#### **Primary Data Gathering Methods Regional Environmental** Monitoring & Assessment Lake Monitoring & Diagnostic Program (REMAP) and Studies (DEP staff, municipal **Surface Water Ambient** water districts, lake watershed Toxics Program (SWAT) Volunteer Monitoring districts) These bureau programs assess Currently, volunteers obtain the bulk of Temperature, transparency, dissolved Lakes contamination levels of toxic metals the lake data for the DEP. Trained oxygen readings, as well as phophorus, and organic chemicals in fish and volunteers provide transparency readings chlorophyll and sediment samples are shellfish tissues, as well as in using a Secchi Disk and other obtained from selected Maine lakes, ponds sediment samples for all surface measurements. and tributaries. Biological Monitoring (DEP) Dissolved Oxygen Monitoring **Surface Water Ambient** Rivers, and Modeling (DEP) **Toxics Program (SWAT)** Temperature, dissolved oxygen, conductivity, (described above) and Streams, and flow readings are taken at monitoring sites. Helps to determine the presence of **Dioxin Monitoring** Bottom dwelling insects are captured and oxygen demanding substances from Program (DEP) which **Brooks** studied. The make-up of an insect community point and nonpoint sources and their assesses dioxin below known within a sample may indicate a pollution source impact on dissolved oxygen levels. point sources. upstream of the sampling site. **Surface Water Ambient Marine Environmental Monitoring Department of Marine Resources Toxics Program (SWAT)** Estuary, (DMR) and State Planning Program (DEP) Office's Shore Stewards (described above) and Coastal Obtains dissolved oxygen, salinity, nutrient Dioxin Monitoring Program/Volunteers and temperature readings. Also monitors **Program** (described above). Waters bottom dwelling organisms in estuaries and Monitors bacteria in shellfishing areas. offshore waters. Site-specific (currently no ambient groundwater monitoring) Ground-Within the DEP, most site-specific groundwater monitoring information is obtained either by staff, permit holders, or as a result of enforcement agreements. The BLWQ requires groundwater monitoring at project water sites when activity poses a risk to groundwater quality, or an adverse impact has already occurred. The

sites.

DEP Bureau of Rememdiation and Waste Management (BRWM) also conducts monitoring at specific